Evaluation of Micro-Carbon Residue Increase Based Test

- Changes in water content, viscosity, micro-carbon residue (MCR) values of two bio-oils were determined following accelerated aging procedure (4, 8, 16 and 24 hours at 80°C).
- MCR values may be represented on dry basis to avoid underestimation of the value as water would not contribute to it (Fig. 2).
- While viscosity values of Bio-oil #1 fluctuated over time due to the high water content, MCR values (dry basis) showed an increase (Fig. 3).
- Both bio-oils exhibited an increase in MCR values over the accelerated aging period (Fig. 4). A higher increase were seen for Bio-oil #1 which may be related to higher water content initially present in this bio-oil facilitating aging reactions.
- There is a clear correlation between change in viscosity and change in micro-carbon residue of Bio-oil #2 (Fig. 5).

Conclusion


References